CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 89-149
NPDES NO. CA 0037702
REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
WATER POLLUTION CONTROL PLANT
OAKLAND, ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. East Bay Municipal Utility District, Special District No. 1, hereinafter called the discharger, submitted a report of waste discharge dated March 17, 1989, for reissuance of NPDES Permit No. CA0037702.

2. The discharger presently discharges an average dry weather flow of 75 million gallons per day (mgd) from its high purity oxygen activated sludge secondary treatment plant which has a dry weather design capacity of 120 mgd. This plant treats domestic and industrial wastewater from the Cities of Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont and the Stege Sanitary District which also own and operate the collection systems. The treated wastewater is discharged into Central San Francisco Bay, a water of the State and United States, through a submerged diffuser adjacent to the San Francisco-Oakland Bay Bridge about 5,664 feet offshore at a depth of 45 feet below mean lower low water (Longitude 122 deg., 20 min., 55 sec.; Latitude 37 deg., 49 min., 2 sec.). Currently, the discharger composts approximately 20% to 25% of the sewage sludge, with the remainder disposed of at municipal landfills. The discharger is presently evaluating silviculture and turf farms as additional disposal methods.

3. The discharger is presently governed by Waste Discharge Requirements, Order No. 84-54, which allows discharge into Central San Francisco Bay, and Order No. 84-61 which regulates the discharge from interceptor wet weather overflow structures (NPDES Permit No. CA0038440).

4. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986 and the State Water Resources Control Board (SWRCB) approved it on May 21, 1987.

5. The beneficial uses of Central San Francisco Bay and contiguous water bodies are:

   . Industrial Service Supply
   . Industrial Process Supply

- Navigation
- Water Contact Recreation
- Non-contact Water Recreation
- Ocean Commercial and Sport Fishing
- Wildlife Habitat
- Preservation of Rare and Endangered Species
- Fish Migration
- Fish Spawning
- Shellfish Harvesting
- Estuarine Habitat

7. An Operations and Maintenance Manual is maintained by the discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, facilities, and recommended operating strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, this manual should be kept updated to reflect significant changes in plant facilities or activities.

8. The discharger has implemented and is maintaining an EPA approved local Pretreatment Program for source control and application of pretreatment standards.

9. This Order serves as an NPDES Permit, reissuance of which is exempt from the provision of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

10. The discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided with the opportunity for a public hearing and the opportunity to submit their written views and recommendations.

11. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the discharger in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted thereunder shall comply with the following:

A. Discharge Prohibitions

1. Bypass or overflow of untreated wastewater to waters of the State either at the treatment plant or from any of the discharger's interceptor system and pump stations tributary to the treatment plant is prohibited. During wet weather such overflows or by-passses will be allowed, consistent with NPDES Permit No. CA0038440.

2. The average dry weather flow shall not exceed 120 mgd. Average shall be determined over three consecutive months each year.

B. Effluent Limitation

1. Effluent discharged shall not exceed the following limits:

	Constituents	Units	Monthly Average	Weekly Average	Maximum Daily	Instantaneous Maximum
a.	Settleable Matter	ml/l-hr	0.1	-	-	0.2
b.	BOD (5-day)	mg/l	30	45	-	-
c.	Total Suspended Solids	mg/l	30	45	-	-
d.	Oil & Grease	mg/l	10	-	20	-
e.	Total Chlorine Residual (1)	mg/l	-	-	-	0.0

(1) Requirement defined as below the limit of detection in standard test method.

2. The arithmetic mean of the biochemical oxygen demand (5-day, 20 C) and suspended solids values, by weight for effluent samples collected in calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected approximately the same times during the same period (i.e. 85 percent removal).

3. The moving median value for total coliform in any five consecutive effluent samples shall not exceed 240 MPN/100 ml. Any single sample shall not exceed 10,000 MPN/100 ml when verified by a repeat sample within 48 hours.

4. The pH of the discharge shall not exceed 9.0 nor be less than 6.0.

5. The survival of test organisms acceptable to the Executive Officer in 96-hour bioassays of the effluent shall achieve a 90 percentile value of not less than 50% survival based on the ten most recent consecutive samples.

6. Representative samples of the effluent shall not exceed the following limits (1):

Constituent	Unit of Measurement	Daily Maximum
a. Arsenic	ug/l	200
b. Cadmium	ug/l	30

c.	Chromium(VI) (2)	ug/l	110
d.	Copper	ug/l	200
e.	Lead	ug/l	56
f.	Mercury	ug/l	1
g.	Nickel	ug/l	71
h.	Silver	ug/l	23
i.	Zinc	ug/l	580
j.	Cyanide	ug/l	25
K.	Phenols	ug/l	500
l.	Polynuclear Aromatic Hydrocarbons(3)	ug/l	150
m.	Selenium (4)		

(1) These limits are intended to be achieved through secondary treatment, source control and application of pretreatment standards.

(2) The discharger, at its option, may meet this limit as total chromium.

(3) As identified by EPA Method 610. If a discharge exceeds the limit for PAHs, concentrations of individual constituents should be reported.

(4) Selenium limitation to be established.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alternation of temperature, turbidity, or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	Dissolved oxygen	5.0 mg/l minimum. Median of any three consecutive months shall not be less than 80% saturation. When natural factors cause lesser concentrations than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	Dissolved Sulfide	0.1 mg/l maximum.
c.	pH	Variation from natural ambient pH by more than 0.5 pH units.
d.	Un-ionized Ammonia	0.025 mg/l as N Annual Median 0.16 mg/l as N Maximum

3. The discharge shall not cause a violation of any applicable water quality standard for receiving water adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Provisions

1. The requirements prescribed by this Order supersede the requirement prescribed by Order No. 84-54. Order No. 84-54 is hereby rescinded.

2. Where effluent concentration limitations in mg/l are contained in this permit, the following mass emission limitations shall also apply:

   Mass Emission Limit (in lbs/day or kg/day) = Concentration Limit in mg/l x (8.34 or 3.79) x Actual flow in mgd averaged over the time interval to which the limit applies.

3. The discharger shall comply with all sections of this Order immediately upon adoption.

4. The discharger shall review and update its Operations and Maintenance Manual annually, or in the event of significant facility or process changes, shortly after such changes have occurred. Annual revisions, or letters stating that no changes are needed, shall be submitted by April 15 of each year. Documentation of operator input and review shall accompany each annual update.

5. The discharger shall review and update annuallyits contingency plan as required by Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

6. The discharger shall implement and enforce its approved pretreatment program in accordance with Regional Board Order No. 84-60 and its amendments thereafter. The discharger's responsibilities include, but are not limited to:

   a. Enforcement of national pretreatment standards (e.g., prohibited discharges, categorical standards, and financial provisions described in the general pretreatment regulations (40 CFR 403) and the discharger's approved pretreatment program including subsequent modifications to the program).

   b. Implementation of the pretreatment program in accordance with the legal authorities, policies, procedures, and financial provisions described in the general pretreatment regulations (40 CFR 403) and the Discharger's approved pretreatment program including subsequent modifications to the program.

   c. Submission of annual and quarterly reports to EPA and the State as described in Board Order 84-60 and its amendments thereafter.

7. The discharger shall comply with the attached self-monitoring program. The Executive Officer may make minor amendment to it pursuant to federal regulations (40 CFR 122.63).

8. The discharger shall comply with all items of the attached "Standard Provisions and Reporting Requirements" dated December, 1986.

9. This Order expires September 20, 1994. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

10. This Order shall serve at National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become

effective 10 days after the date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Steven R. Ritchie, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on September 20, 1989.

STEVEN R. RITCHIE
Executive Officer

Attachments:
Standard Provisions & Reporting Requirements, December 1986
Self-Monitoring Program
Resolution 74-10

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
WATER POLLUTION CONTROL PLANT
OAKLAND, ALAMEDA COUNTY

NPDES NO. CA 0037702

ORDER NO. 89-149

CONSISTING OF

PART A, dated December 1986

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Station	Description
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment or sidestream.

B. EFFLUENT

Station	Description
E-001	At any point in the outfall from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present.
E-001-D	At any point in the disinfection facilities at which point adequate contact with the disinfectant is assured.

C. RECEIVING WATERS

Station	Description
C-11	At a point in San Francisco Bay directly over the diffuser structure of the outfall line and 500 feet easterly of Diffuser Station 18. Diffuser Station 18 is also over the diffuser structure and is located at 37 deg. 49 min. 02 sec. W and 122 deg. 20 min. 55 sec. E. See attached Location Map.
C-4,C-9	At points in San Francisco Bay, located in the vicinity of the terminal of the outfall, as shown on the attached Location Map.
C-16	At a point in san Francisco bay, located at the intersection of two range lines, described as follows: (1) a line passing through the SIREN on the northerly of two wharf systems on the easterly side of Treasure Island and the flashing white light situated at the northernmost point of Tresure Island, and

(2) a line passing through the BELL on the southerly of two wharf systems on the easterly side of Treasure Island and the Stack on shore, and approximately on line with the pier extending into the wharf system on which the BELL' is situated.

C-11 At a point in San Francisco Bay, located at the intersection of two range lines, described as follows:

(1) a line passing through Buoy "1" and Buoy "3", markers for the northerly side of Oakland Outer Harbor Entrance Channel, and

(2) a line passing through Buoy "2", marker for the southerly side of Oakland Outer Harbor Entrance Channel, and Buoy "3" marker for the northerly side of Oakland Middle Harbor Entrance Channel.

D. LAND OBSERVATIONS

Station	Description
P-1 thru P-n'	Located at equidistance intervals, not to exceed 300 feet on the fenceline in the closest proximity to the main pumping station and the primary sedimentation tanks. (A sketch showing the location of these stations, and the assigned designations and appurtenances will accompany each report.)

E. OVERFLOWS AND BYPASSES

Station	Description
O-1 thru O-n'	Bypass or overflows from treatment facility, manholes, pump stations, or interceptor system under discharger's control.
Note:	SMP report will include map and description of bypass or overflow location.
Reporting:	Shall be submitted with monthly report when overflows or bypasses occur and include date, time, quantity, and period of each overflow or bypass and the cause.

II. SCHEDULE OF SAMPLING ANALYSIS AND OBSERVATION

The schedule of sampling and analysis shall be that given as Table I.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in the Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 89-149.

2. Is effective on the date shown below.

3. May be amended by the Executive Officer pursuant to 40 CFR 122.63.

STEVEN R. RITCHIE
Executive Officer

Effective Date: September 20, 1989

Attachments:
Table I and Legend for Table

(1) (7) & (10)

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A001	E-001			E-001D			All C Sta		All P Sta		All O Sta	
TYPE OF SAMPLE	C-24	G(4)	C-24	Cont	G(4)	C-24	Cont	G		O			
Flow Rate (mgd)	D			D									
BOD, 5-day, 20°C, or COD (mg/l & kg/day) (1) (3)	D		D										
Chlorine Residual & Dosage (mg/l & kg/day) (8)					H or Cont.								
Settleable Matter (ml/l-hr. & cu. ft./day)		D											
Total Suspended Matter (mg/l & kg/day) (1) (3)	D		D										
Oil and Grease (mg/l & kg/day)		W											
Coliform (Total or Fecal) (MPN/100 ml) per req't					D			2/M					
Fish Tox'y 96-hr.(5,6)& Surv'l in undiluted waste						2/M							
Ammonia Nitrogen (mg/l & kg/day)			2/W(9)					2/M					
Nitrate Nitrogen (mg/l & kg/day)													
Nitrite Nitrogen (mg/l & kg/day)			2/W(9)										
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity (Jackson Turbidity Units)													
pH (units)		D						2/M					
Dissolved Oxygen (mg/l and % Saturation)		D						2/M					
Temperature (°C)		D						2/M					
Apparent Color (color units)			W					2/M					
Secchi Disc (inches)								2/M					
Sulfides (if DO<5.0 mg/l) Total & Dissolved (mg/l)		D						2/M					
Arsenic (mg/l & kg/day)			W (7)										
Cadmium (mg/l & kg/day)			W(7)										
Chromium, Total (mg/l & kg/day)			W(7)										
Copper (mg/l & kg/day)			W(7)										
Cyanide (mg/l & kg/day)			W(7)										
Silver (mg/l & kg/day)			W(7)										
Lead (mg/l & kg/day)			W(7)										

TABLE 1 (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A001	E-001			E-001D			All C Sta	All P Sta		All O Sta		
TYPE OF SAMPLE	C-24	G(4)	C-24	Cont.	G(4)	C-24	Cont.	G		O			
Mercury (mg/l & kg/day)			W(7)										
Nickel (mg/l & kg/day)			W(7)										
Zinc (mg/l & kg/day)			W(7)										
PHENOLIC COMPOUNDS (mg/l & kg/day)			W(7)										
All Applicable Standard Observations		D						2/M		W	E		
Bottom Sediment Analyses and Observations													
Polynuclear Aromatic Hydrocarbons			W(7)										
Non-dissociated Ammonium Hydroxide as N (mg/l)								2/M					
Selenium			W(7)										

LEGEND FOR TABLE

TYPES OF SAMPLES

- **G** = grab sample
- **C-24** = composite sample - 24-hour
- **C-X** = composite sample - X hours (used when discharge does not continue for 24-hour period)
- **Cont** = continuous sampling
- **DI** = depth-integrated sample
- **BS** = bottom sediment sample
- **O** = observation

TYPES OF STATIONS

- **I** = intake and/or water supply stations
- **A** = treatment facility influent stations
- **E** = waste effluent stations
- **C** = receiving water stations
- **P** = treatment facilities perimeter stations
- **L** = basin and/or pond levee stations
- **B** = bottom sediment stations
- **G** = groundwater stations

FREQUENCY OF SAMPLING

- **E** = each occurence
- **H** = once each hour
- **D** = once each day
- **W** = once each week
- **M** = once each month
- **Y** = once each year
- **2/H** = twice per hour
- **2/W** = 2 days per week
- **5/W** = 5 days per week
- **2/M** = 2 days per month
- **2/Y** = once in March and once in September
- **Q** = quarterly, once in March, June, Sept. and December
- **2H** = every 2 hours
- **2D** = every 2 days
- **2W** = every 2 weeks
- **3M** = every 3 months
- **Cont** = continuous

NOTES FOR TABLE I:

1/ During any day when bypassing occurs from any treatment unit(s) in the WPCP, the monitoring program for the effluent shall include the following in addition to the above schedule for sampling, measurement and analyses.

a. Composite sample for BOD and Total Suspended Solids.

b. Grab samples for Total Coliform, Settleable Matter and Oil and Grease.

c. Continuous monitoring of flow.

d. Continuous or every hour monitoring of chlorine residual.

2/ Oil and Grease sampling shall consist of a grab sample. In the event that sampling for oil and grease every two week or less frequency shows an apparent violation of the waste discharge permit, 30-day average limitation (considering the results of one or two day's sampling as a 30-day average), then the sampling frequency shall be increased to weekly so that a true 30-day average can be computed and compliance can be determined.

3/ Percent removal (effluent vs. influent) shall also be reported.

4/ Grab samples shall be taken on day(s) of composite sampling.

5/ Sample date for bioassay and for one of all other specified parameters shall coincide with composite sample(s).

6/ If a continuous bioassay is to be run, sample may be from E-001 prior to disinfection instead of dechlorinating E-001 effluent.

7/ If any sample is in violation of limits, sampling shall be increased for that parameter to at least weekly or greater until compliance is demonstrated in two successive samples.

8/ Data shall be reported using forms provided by the Board or an approved equivalent; chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, grab samples shall be taken every 30 minutes until compliance is achieved.

9/ These parameters shall be tested for on the same composite sample used for the bioassay.

10/ All flow other than to the outfall (e.g. sludge, etc.) shall also be reported monthly. Daily records shall be kept of the quantity (cu. yds. or cu.ft.) and solids content (%) of dewatered sludge disposed of and the location of disposal.